Network tools and utilities

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tftp on MacOS v26 (Tahoe) [CANCELLED]

preface

tftp was depreciated from macOS.

lesson (might be useful)

Check is it available

```
ls /usr/libexec/tftpd
```

```
anton-w@ant1mbp7 ~ % ls /usr/libexec/tftpd
/usr/libexec/tftpd
```

Create local tftp directory AS NORMAL user

```
export u="anton-w"
export dir="/Users/${u}/delme/tftp"
mkdir -p ${dir}
cd ${dir}
pwd
```

current status

```
netstat -f inet | grep tftp
lsof -iUDP:69
lsof -nPi | grep ":69"
```

stop service and verify

```
export s="system/com.apple.tftpd"
launchctl stop ${s}
launchctl bootout ${s}
launchctl disable ${s}
launchctl remove ${s}
launchctl list | grep ${s}

netstat -f inet | grep tftp
lsof -iUDP:69
lsof -nPi | grep ":69"
```

default config has disabled option, override is needed

```
export f="/System/Library/LaunchDaemons/tftp.plist"
cat ${f} | grep com.apple.tftpd
cat ${f} | grep -i -A1 disabled
```

Create override

```
export f="/System/Library/LaunchDaemons/tftp.plist"
export      fov="/Library/LaunchDaemons/local.tftp.plist"
cp ${f} ${fov}
ls -la ${fov}
vi     ${fov}
```

Content

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE plist PUBLIC "-//Apple Computer//DTD PLIST 1.0//EN" "http://www.apple.com/DTDs/PropertyList-
1.0.dtd">
<plist version="1.0">
<dict>
        <key>Disabled</key>
        <false/>
        <key>Label</key>
        <string>local.tftp</string>
        <key>ProgramArguments</key>
        <array>
                <string>/usr/libexec/tftpd</string>
                <string>-d</string>
```

```
            <string>-l</string>
            <string>-s</string>
            <string>/Users/anton-w/delme/tftp</string>
            <string>-u</string>
            <string>anton-w</string>
        </array>
        <key>inetdCompatibility</key>
        <dict>
            <key>Wait</key>
            <true/>
        </dict>
        <key>InitGroups</key>
        <true/>
        <key>Sockets</key>
        <dict>
            <key>Listeners</key>
            <dict>
                <key>SockServiceName</key>
                <string>tftp</string>
                <key>SockType</key>
                <string>dgram</string>
            </dict>
        </dict>
</dict>
</plist>
```

Verify plist file

```
cat ${fov} | grep -i -A1 disabled
plutil -lint ${fov}
```

Set ownership and permissions

```
ls -la ${fov}
chown root:wheel ${fov}
chmod 644 ${fov}
ls -la ${fov}
```

Enable service

```
export s="system/local.tftp"

launchctl stop ${s}
launchctl bootout ${s}
launchctl disable ${s}
launchctl remove ${s}
launchctl list | grep ${s}

launchctl enable ${s}
export f="/Library/LaunchDaemons/local.tftp.plist"
launchctl load -wF ${f}
# launchctl bootstrap system ${s}

launchctl start ${s}
launchctl list ${s}
launchctl print ${s} | grep state
```

New file should be in the dump

```
launchctl dumpstate | grep ".plist" | grep ftp
```

```
sh-3.2#
sh-3.2# launchctl dumpstate | grep ".plist" | grep ftp
        path = /System/Library/LaunchDaemons/com.apple.ftp-proxy.plist
        path = /Library/LaunchDaemons/local.tftp.plist
sh-3.2#
```

Verify that default TFTP root exists

```
ls -la /private/tftpboot
```

Create if missing

```
sudo mkdir -p /private/tftpboot
sudo chmod 777 /private/tftpboot
```

Verify tftp is listening on

```
netstat -f inet | grep tftp
netstat -an | grep "*.69"
```

```
netstat -atp UDP | grep tftp
lsof -iUDP:69
lsof -nPi | grep ":69"
```

Check state firewall

```
sudo /usr/libexec/ApplicationFirewall/socketfilterfw --getglobalstate
```

if needed, create a rule to allow

```
sudo /usr/libexec/ApplicationFirewall/socketfilterfw --add /usr/libexec/tftpd
sudo /usr/libexec/ApplicationFirewall/socketfilterfw --unblockapp /usr/libexec/tftpd
```

I am using Little Snitch, thus my native firewall is disabled.

TFTP daemon is set up and ready to receive/transmit files.

troubleshooting

```
launchctl dumpstate | grep ".plist" | grep ftp
```

```
log stream         --style syslog --predicate 'process == "launchctl"'
log stream         --style syslog --predicate 'subsystem == "com.apple.xpc.launchctl"'
log show --last 5m --style syslog --predicate 'subsystem == "com.apple.xpc.launchctl"'
```

Start daemon manually

```
/usr/libexec/tftpd \
  -d \
  -l \
  -s \
  /Users/anton-w/delme/tftp \
  -u \
  anton-w
```

FIle exist, is executable , but does not do anything.

```
pkgutil --file-info /usr/libexec/tftpd
# no package provides
codesign -dv /usr/libexec/tftpd
# has not authority
csrutil authenticated-root status
```

```
file /usr/libexec/tftpd
mount | grep "sealed"
```

Go home.

Terminal via serial port on MacOS Sonoma

Connect

Verify connectivity

```
system_profiler SPUSBDataType | grep -i -A5 serial
```

```
anton@ant1mbp4 ~ % system_profiler SPUSBDataType | grep -i -A5 serial
2026-04-01 21:12:57.369 system_profiler[1802:28495] SPUSBDevice: IOCreatePlugInInterfaceForService failed 0xe00002be
2026-04-01 21:12:57.370 system_profiler[1802:28495] SPUSBDevice: IOCreatePlugInInterfaceForService failed 0xe00002be
2026-04-01 21:12:57.370 system_profiler[1802:28495] SPUSBDevice: IOCreatePlugInInterfaceForService failed 0xe00002be
2026-04-01 21:12:57.371 system_profiler[1802:28495] SPUSBDevice: IOCreatePlugInInterfaceForService failed 0xe00002be
2026-04-01 21:12:57.371 system_profiler[1802:28495] SPUSBDevice: IOCreatePlugInInterfaceForService failed 0xe00002be
2026-04-01 21:12:57.372 system_profiler[1802:28495] SPUSBDevice: IOCreatePlugInInterfaceForService failed 0xe00002be
                  Serial Number: 1[redacted]
                  Speed: Up to 5 Gb/s
                  Manufacturer: Realtek
                  Location ID: 0x01334000 / 7
                  Current Available (mA): 900
                  Current Required (mA): 288
--
                          Serial Number: [redacted]
                          Speed: Up to 12 Mb/s
                          Manufacturer: USB-RS232 Interface Converter
                          Location ID: 0x01131140 / 14
                          Current Available (mA): 500
                          Current Required (mA): 50
--
                          Serial Number: [redacted]
                          Speed: Up to 480 Mb/s
                          Location ID: 0x01131130 / 13
                          Current Available (mA): 500
                          Current Required (mA): 500
                          Extra Operating Current (mA): 0
```

```
ioreg -p IOUSB
```

Identify device

```
ls -ltr /dev/tty*
```

```
crw-rw-rw-  1 root   wheel   0x4000003  1 Apr 20:54 /dev/ttyp3
crw-rw-rw-  1 root   wheel   0x4000002  1 Apr 20:54 /dev/ttyp2
crw-rw-rw-  1 root   wheel   0x4000001  1 Apr 20:54 /dev/ttyp1
crw-rw-rw-  1 root   wheel   0x4000000  1 Apr 20:54 /dev/ttyp0
crw-rw-rw-  1 root   wheel   0x2000000  1 Apr 20:54 /dev/tty
crw-rw-rw-  1 root   wheel   0x9000002  1 Apr 20:54 /dev/tty.Bluetooth-Incoming-Port
crw-rw-rw-  1 root   wheel   0x9000000  1 Apr 20:54 /dev/tty.BLTH
crw--w----  1 anton  tty    0x10000000  1 Apr 21:18 /dev/ttys000
anton@ant1mbp4 ~ %
```

Disconnect, connect back, repeat command to identify it is exactly the same device (it will be usually owned by the root, but by user)

```
ls -ltr /dev/
```

```
crw-r--r--  1 root   wheel           0xa000004  1 Apr 20:54 auditsessions
crw-------  1 root   wheel           0xb000000  1 Apr 20:54 auditpipe
crw-------  1 root   wheel          0x14000001  1 Apr 20:54 afsc_type5
crw-rw-rw-  1 root   wheel           0x9000002  1 Apr 20:54 tty.Bluetooth-Incoming-Port
crw-rw-rw-  1 root   wheel           0x9000003  1 Apr 20:54 cu.Bluetooth-Incoming-Port
crw-rw-rw-  1 root   wheel          0x1e000000  1 Apr 20:54 uart.BLTH
crw-rw-rw-  1 root   wheel           0x9000000  1 Apr 20:54 tty.BLTH
crw-rw-rw-  1 root   wheel          0x16000000  1 Apr 20:54 nfsclnt
crw-rw-rw-  1 root   wheel          0x200003d9  1 Apr 20:54 autofs_nowait
crw-rw-rw-  1 root   wheel          0x21000011  1 Apr 20:54 autofs_notrigger
crw-rw-rw-  1 root   wheel          0x22000011  1 Apr 20:54 autofs_homedirmounter
crw-------  1 root   wheel          0x23000000  1 Apr 20:54 autofs_control
crw-------  1 root   wheel          0x1f000000  1 Apr 20:54 autofs
crw-rw-rw-  1 root   wheel          0x11000000  1 Apr 20:59 random
crw-------  1 root   wheel          0x17000001  1 Apr 21:02 bpf1
crw-------  1 root   wheel          0x17000000  1 Apr 21:02 bpf0
crw-------  1 anton  staff                 0x0  1 Apr 21:12 console
crw-rw-rw-  1 root   wheel           0x9000001  1 Apr 21:19 cu.BLTH
crw-rw-rw-  1 root   wheel           0x3000002  1 Apr 21:21 null
crw-rw-rw-  1 root   tty             0xf000000  1 Apr 21:21 ptmx
crw--w----  1 anton  tty             0x10000003  1 Apr 21:21 ttys003
anton@ant1mbp4 ~ % ls -ltr /dev/
```

Attach `screen` to the serial port

```
screen /dev/ttys003 115200
```

Exit nicely, press

```
CTRL+A
K
Y
```

```
Really kill this window [y/n]
```

Speed tests

Global speed tests providers

Remember to open a new test in the new private session window (to ensure new TCP connection will be established)

CloudFlare

https://speed.cloudflare.com

Does measure download for different sizes. Presents jitter in graphical way. Very good